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NOTES ON GEOGRAPHIC DISTRIBUTION

Reptilia, Gymnophthalmidae, *Micrablepharus maximiliani* (Reinhardt and Lutken, 1861): Distribution extension, new state record and geographic distribution map

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ABSTRACT: We provide records for *Micrablepharus maximiliani* from state of Minas Gerais and present a map representing its distribution. The record of M. maximiliani from municipality of Resplendor, Minas Gerais, represents a distribution extension of 1,050 km southern from the type locality at the municipality of Maruim, Sergipe. Others 57 new records are presented based on specimens housed in several Brazilian and Paraguayan herpetological collections, improving the knowledge on geographic distribution of *M. maximiliani* in South America.

The gymnophthalmid lizard genus *Micrablepharus* Dunn, 1932 currently comprises two species, *M. maximiliani* (Reinhardt and Lutken, 1861) and *M. atticolous* Rodrigues, 1996. *Micrablepharus maximiliani* is widespread distributed in South America, with records for Atlantic Forest, Caatinga, Cerrado, and Pantanal in Brazil, and Humid Chaco in Paraguay (Rodrigues 1996a). This species is diurnal and have fossorial habits, living in the leaf-litter or open ground (Rodrigues 2003), and can also be found inside termite nests (Mesquita *et al.* 2006).

The state of Minas Gerais comprises an area of approximately 587,000 km^2, presenting a high physical heterogeneity. The soil and elevation characteristics, in addition to its vast extension, climate and relief provide a diversity of vegetation which is grouped in three important biomes, Atlantic Forest, Cerrado and Caatinga (Drummond *et al.* 2009). The few data available on reptile richness in the state of Minas Gerais turns difficult the establishment of the geographic distribution of species there (Bérnils *et al.* 2009). Differences in the extent to which different regions and biomes have been inventoried are still large, and thus create a difficulty to discuss the geographic distribution patterns of reptiles (Rodrigues 2005; Bérnils *et al.* 2009). Despite the available information on geographic distribution of *Micrablepharus maximiliani*, we are unaware of its previous recorded occurrence in southeastern Brazil, including the state of Minas Gerais.

Here we report records for *M. maximiliani* from state of Minas Gerais and present a map representing the distribution of this species based on published data (see Table 1), specimens collected by the authors, and specimens examined by us and deposited in the following Brazilian herpetological collections: MINAS GERAIS – Museu de Zoologia João Moojen, Universidade Federal de Viçosa (MZUFV), in Viçosa; Laboratório e Museu de Zoologia, Universidade Federal de Minas Gerais (LMZ), and Museu de Ciências Naturais, Pontifícia Universidade Católica de Minas Gerais (MCN), in Belo Horizonte. RIO DE JANEIRO – Museu Nacional, Universidade Federal do Rio de Janeiro (MNRJ), in Rio de Janeiro (Appendix 1). Considering that *M. maximiliani* is easily distinguishable from its congener *M. atticolous* (see details for diagnosis in Rodrigues 1996a), we choose to also use records of not examined specimens housed in others herpetological collections, in order to improve the present geographic distribution map. For this purpose, records of the following herpetological collections were also considered: BRAZIL: SÃO PAULO – Museu de Zoologia, Universidade de São Paulo (MZUSP), in São Paulo. RIO DE JANEIRO – Museu Nacional, Universidade Federal do Rio de Janeiro (MNRJ), in Rio de Janeiro; Universidade Federal Rural do Rio de Janeiro (CH-UFRRJ), in Seropédica. DISTRITO FEDERAL – Universidade de Brasília (CHUNB), in Brasília. PARAGUAY: Museo Nacional de Historia Natural del Paraguay (MNHNP), in Asunción, Distrito Capital (Appendix 2).

Additionally, records available on the electronic database Species Link (2010) were considered if they added important filling gap registers (these records were referring to specimens housed in the herpetological collections of the Museu de Zoologia, Universidade Estadual de Campinas (ZUEC), in Campinas, state of São Paulo). We also consulted curators of the herpetological collections of Universidade Federal de Juiz de Fora (UFJF), in Juiz de Fora, Minas Gerais, and Laboratório de Zoologia dos Vertebrados da Universidade Federal de Ouro Preto (LZV-UFOP), in Ouro Preto, Minas Gerais, and Museu de Zoologia, Universidade Federal da Bahia (UFBA), in Salvador, Bahia, where no records were found.

During a fieldwork on 7 January 2010, three specimens of *Micrablepharus maximiliani* (Figure 1) were collected at the right bank of Doce River, municipality of Resplendor, state of Minas Gerais (19°14'39.9" S, 41°18'25.8" W, 104 m elevation). The specimens were captured using pitfall traps with drift fences, made of 60 L buried buckets, placed in a sandy soil inside a small forest fragment, distant about 30 m away from the right bank of Doce River (Figure 2).

Collection permits were given by the Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis (#571/2009).

FIGURE 1. Specimen of *Micrablepharus maximiliani* (MZUFV 857, adult, 112 mm total length) from the municipality of Resplendor, state of Minas Gerais, Brazil. Photo by J. S. Dayrell.

FIGURE 2. Pitfall traps with drift fence in the small forest fragment at the right bank of Doce River, municipality of Resplendor, state of Minas Gerais, Brazil. Photo by J. S. Dayrell.

The record of *Micrablepharus maximiliani* from municipality of Resplendor represents a distribution extension of 1,050 km southern from the type locality, the municipality of Maruim, state of Sergipe, and 220 km southeastern from the nearest register, in municipality of Mucuri (BA) (Vanzolini and Carvalho 1991; Rodrigues 1996a). Resplendor is one of the southernmost registers of *M. maximiliani* inside the Atlantic Forest biome in the state of Minas Gerais, and even the most nuclear register inside this biome (Figure 3 and 4). The other registers in state of Minas Gerais correspond to areas of Cerrado (municipalities of Francisco Sá, Grão Mogol, Jaboticatubas, Nova Ponte and Santana do Riacho), as well transitional areas between Cerrado and Atlantic Forest (municipalities of Araçuaí and Virgem da Lapa). As the municipality of Resplendor is located in a region of semi-deciduous seasonal forest in the Atlantic Forest, the presence of *M. maximiliani* there is probably a result of colonization from the surrounding Cerrado or even Caatinga. The presence of most registers in transitional areas between Atlantic Forest, Cerrado and Caatinga biomes (Drummond *et al.* 2005), suggests that the geographic distribution of *M. maximiliani* in this state is mainly associated with open habitats, as observed in other localities. The lack of records of occurrence of *M. maximiliani* in the northwestern part of the state seems to be a reflection of the sampling gaps in the central portion of the Cerrado, as previously reported by Bérnils *et al.* (2009) (see Figure 4).

According to Werneck and Colli (2006), *Micrablepharus maximiliani* is widespread in Cerrado and enters neighboring biomes, as such as the Caatinga. Based on new records presented here, the geographic distribution of this species is between the coordinates 34°52'W, 01°26'S and 65°22'W, 26°01'S, similar to the distribution previously presented by Rodrigues (1996a). This gymnophthalmid lizard is typically associated with open habitats in Cerrado (53.28 % of registers, n = 73) and Caatinga (17.51 %, n = 24), reaching transitional areas between neighboring flooded biomes as Pantanal (1.45 %, n = 2), Humid Chaco (2.91 %, n = 4), Dry Chaco (0.007 %, n = 1), and forested biomes, as Amazonia (6.56 %, n = 9) and Atlantic Forest (17.51%, n = 24) (Table 1).

The records of *M. maximiliani* for Atlantic Forest in northeastern Brazil are associated to transitional areas with the Caatinga, which extends to about half the area supposedly covered by the Atlantic Forest biome in the states of Alagoas and Rio Grande do Norte (Tabarelli *et al.* 2005). In the Atlantic Forest of coastal Brazil, the records of *M. maximiliani* are related to the Restinga (*e.g.* Freire 1996; Silva *et al.* 2006), an associated ecosystem characterized mainly by the presence of sandy-soils, scrubs and forest (Ministério do Meio Ambiente 2002). Vitt and Caldwell (1993) report the occurrence of *M. maximiliani* from southern Cerrado in the state of Rondônia. However, the lizard illustrated in their work (Vitt and Caldwell 1993, Figure 2B) is actually a *M. atticolous*, as noted by the white dorso-lateral stripe extending from the most anterior superciliary to the anterior third of the tail, and bordered above by a characteristic black stripe (diagnostic character from Rodrigues 1996a). Besides this, lizards studied by Vitt and Caldwell (1993) were all collected at the BR-364 road, near municipality of Vilhena, a locality indicated by Rodrigues (1996a) as part of the geographic distribution of *M. atticolous*. According to Vanzolini and Carvalho (1991), misidentifications in this species were common in old literature, where *M. maximiliani* is referred as *Gymnophthalmus quadrilineatus* (*e.g.* Wied-Neuwied 1825; Schmidt and Inger 1951).

It is important to note that two records from the state of Espírito Santo (municipalities of São Mateus [MZUSP 88146] and Linhares [ZUEC-REP 88562195]) correspond to specimens not examined by us. However, these records are plausible since these municipalities have Restinga areas (Lani *et al.* 2008), a ecosystem occupied by the species in others localities. The record from municipality of Santa Marta in Espírito Santo is uncertain. Rodrigues (1996a) stated that *Micrablepharus dunni* Laurent, 1949 is actually a synonym of *M. maximiliani*, and its type locality is "Santa Marta", a toponym that could be from Brazil or Colombia (Peters and Donoso-Barros 1970; Rodrigues 1996a). As there is no record of *Micrablepharus* in Colombia, the likely type locality of *M. dunni* is Santa Marta, state of Espírito Santo, Brazil (Rodrigues 1996a).

The record from the municipality of Nova Friburgo, state of Rio de Janeiro is based on two specimens collected on 1956 (MNRJ 18266-18267). Nova Friburgo presents a large portion of its area covered by open vegetation types

as grassland, and secondary forests (Tanizaki-Fonseca and Moulton 2000). These phytophysiognomies may support the ecological requirements of *M. maximiliani*, considering that this species is ecologically tolerant (Rodrigues 1996a).

It is possible that *M. maximiliani* occurs at low densities in the coastal regions in southeastern Brazil, since it has not been reported in studies of lizards community in Restinga areas of Espírito Santo (*e.g.* Araújo 1991; Rocha and Bergallo 1997; Teixeira 2001; Soares and Araújo 2008) and Rio de Janeiro (*e.g.* Rocha and Bergallo 1997; Rocha and Vrcibradic 1998; Hatano *et al.* 2001; Carvalho *et al.* 2007).

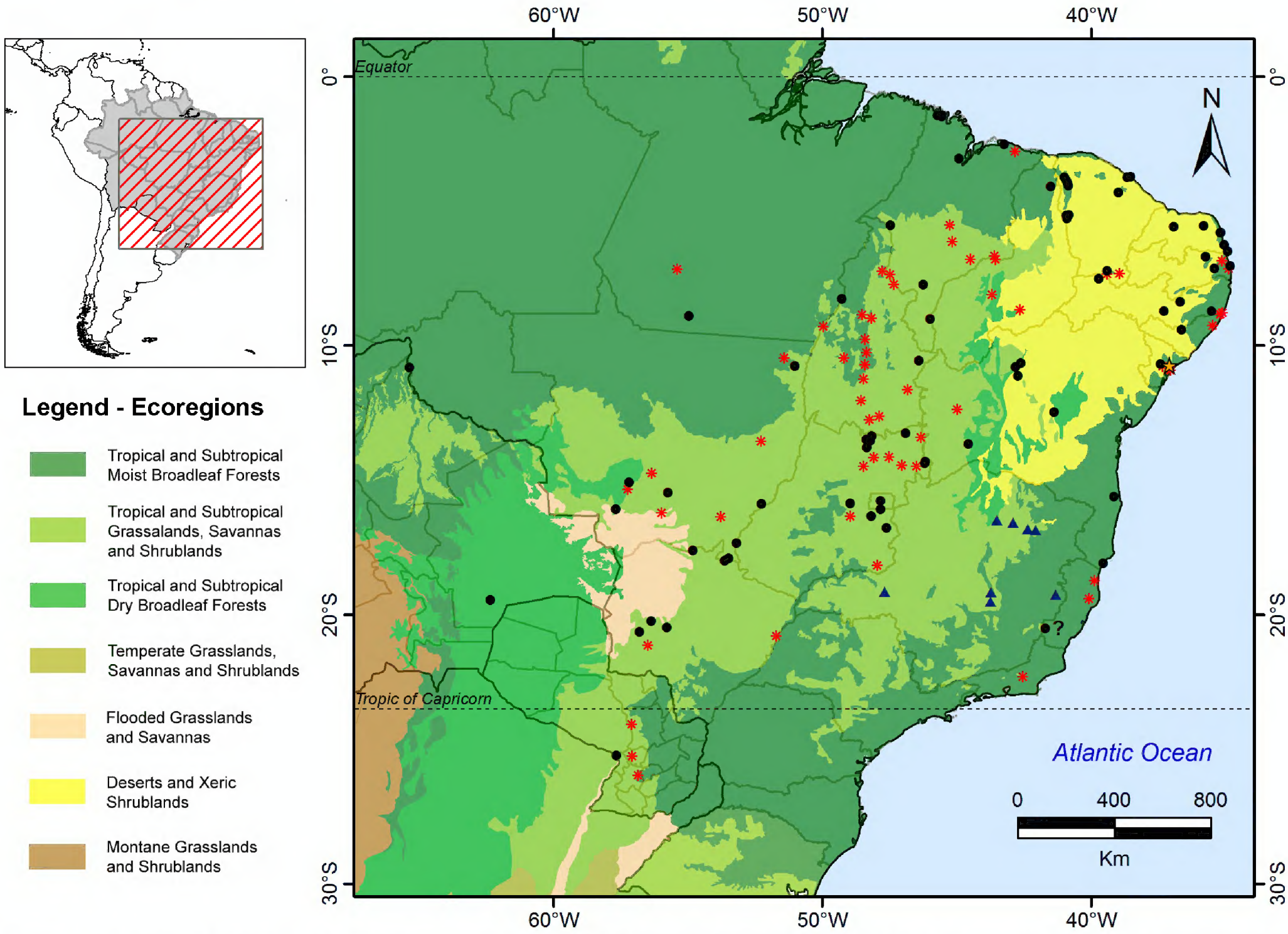

FIGURE 3. Geographic distribution of *Micrablepharus maximiliani* in South America, based on literature data (circles), collection records (red asterisks) (see references in Table 1) and new records from state of Minas Gerais (blue triangles). Orange star: type locality of *M. maximiliani*. The symbol "?" corresponds to a record stated as uncertain by Rodrigues (1996a). Map by M. R. Moura.

TABLE 1. Literature data records compiled and herpetological collection records of the geographic distribution of *Micrablepharus maximiliani* in South America. Acronyms: CHUNB (Coleção Herpetológica, Universidade de Brasília); MCNR (Museu de Ciências Naturais, Pontifícia Universidade Católica de Minas Gerais); MNHNP (Museo Nacional de Historia Natural del Paraguay); MNRJ (Museu Nacional, Universidade Federal do Rio de Janeiro); MZUFV (Museu de Zoologia João Moojen, Universidade Federal de Viçosa); MZUSP (Museu de Zoologia, Universidade de São Paulo); UFMG (Universidade Federal de Minas Gerais); ZUEC (Museu de História Natural, Universidade Estadual de Campinas).

MUNICIPALITY	COUNTRY	ADMINISTRATIVE UNIT	BIOME	LATITUDE	LONGITUDE	REFERENCE
Palmeira dos Índios	Brazil	Alagoas	Caatinga	09°24' S	36°37' W	Rodrigues (1996a)
Passo de Camaragibe	Brazil	Alagoas	Atlantic Forest	09°14' S	35°28' W	MZUSP
Barreiras	Brazil	Bahia	Atlantic Forest	15°36' S	39°09 W	Rodrigues (1996a)
Barreirinha	Brazil	Bahia	Cerrado	13°38' S	44°34' W	Rodrigues (1996a)
Ibiraba	Brazil	Bahia	Cerrado	10°47' S	42°49' W	Rodrigues (1996b)
Lençóis	Brazil	Bahia	Caatinga	12°28' S	41°22' W	Juncá (2005)
Mucuri	Brazil	Bahia	Atlantic Forest	18°04' S	39°33' W	Wied-Neuwied (1825)
Santo Inácio	Brazil	Bahia	Caatinga	11°06' S	42°43' W	Rodrigues (1996b)
Vacaria	Brazil	Bahia	Caatinga	10°39' S	42°37' W	Rodrigues (1996b)
São Desidério	Brazil	Bahia	Cerrado	12°21' S	44°58' W	MZUSP
Arajara	Brazil	Ceará	Caatinga	07°19' S	39°23' W	MZUSP
Caucaia	Brazil	Ceará	Caatinga	03°43' S	38°39' W	Rodrigues (1996a)

Table 1. Continued.

Municipality	Country	Administrative Unit	Biome	Latitude	Longitude	Reference
Crateús (Serra das Almas[1])	Brazil	Ceará	Caatinga	05°08' S	40°49' W	Borges-Nojosa and Gascon (2005)
Crateús (Serra das Almas[2])	Brazil	Ceará	Caatinga	05°08' S	40°55' W	Borges-Nojosa and Gascon (2005)
Crateús (Serra das Almas[3])	Brazil	Ceará	Caatinga	05°16' S	40°54' W	Borges-Nojosa and Gascon (2005)
Crato	Brazil	Ceará	Caatinga	07°12' S	39°24' W	Borges-Nojosa and Caramaschi (2003)
Fortaleza	Brazil	Ceará	Caatinga	03°43' S	38°32' W	Rodrigues (1996a)
Ibiapina	Brazil	Ceará	Caatinga	03°55' S	40°53' W	Borges-Nojosa and Caramaschi (2003)
Milagres	Brazil	Ceará	Caatinga	07°17' S	38°56' W	CHUNB, MNRJ
Mulungú	Brazil	Ceará	Caatinga	04°18' S	38°59' W	Rodrigues (1996a)
São Benedito	Brazil	Ceará	Caatinga	04°02' S	40°51' W	Borges-Nojosa and Caramaschi (2003)
Tianguá	Brazil	Ceará	Caatinga	03°43' S	40°59' W	Borges-Nojosa and Caramaschi (2003)
Ubajara	Brazil	Ceará	Caatinga	03°51' S	40°55' W	Borges-Nojosa and Caramaschi (2003)
Brasília	Brazil	Distrito Federal	Cerrado	16°04' S	47°50' W	Colli *et al.* (2002)
Brasília	Brazil	Distrito Federal	Cerrado	15°46' S	47°50' W	Brandão and Araújo (1998)
Linhares	Brazil	Espírito Santo	Atlantic Forest	19°23' S	40°04' W	ZUEC
Santa Marta ("uncertain")	Brazil	Espírito Santo	Atlantic Forest	20°30' S	41°43' W	Rodrigues (1996a)
São Mateus	Brazil	Espírito Santo	Atlantic Forest	18°43' S	39°51' W	MZUSP
Anápolis	Brazil	Goiás	Cerrado	16°19' S	48°57' W	MZUSP
Alcinópolis	Brazil	Goiás	Cerrado	17°59' S	53°37' W	Valdujo *et al.* (2009)
Alto Araguaia	Brazil	Goiás	Cerrado	17°53' S	53°29' W	Valdujo *et al.* (2009)
Alto Paraíso de Goiás	Brazil	Goiás	Cerrado	14°07' S	47°30' W	CHUNB
Alvorada do Norte	Brazil	Goiás	Cerrado	14°28' S	46°29' W	CHUNB
Bodoquena	Brazil	Goiás	Cerrado	20°38' S	56°48' W	Uetanabaro *et al.* (2007)
Buritinópolis (PCH Sta Ed. I)	Brazil	Goiás	Cerrado	14°18' S	46°10' W	Cintra *et al.* (2009)
Buritinópolis (PCH Sta Ed. II)	Brazil	Goiás	Cerrado	14°21' S	46°11' W	Cintra *et al.* (2009)
Caldas Novas	Brazil	Goiás	Cerrado	16°19' S	48°11' W	Moreira *et al.* (2009)
Cana Brava	Brazil	Goiás	Cerrado	13°29' S	48°21' W	Rodrigues (1996a)
Cavalcante	Brazil	Goiás	Cerrado	13°21' S	48°10' W	Moreira *et al.* (2009)
Catalão	Brazil	Goiás	Cerrado	18°09' S	47°56' W	MNRJ
Colinas do Sul	Brazil	Goiás	Cerrado	14°09' S	48°04' W	CHUNB, MNRJ
Cristalina	Brazil	Goiás	Cerrado	16°46' S	47°36' W	Rodrigues (1996a)
Flores de Goiás	Brazil	Goiás	Cerrado	14°26' S	47°02' W	CHUNB
Minaçu	Brazil	Goiás	Cerrado	13°31' S	48°13' W	Rodrigues (1996a)
Minaçu (UHE Serra da Mesa)	Brazil	Goiás	Cerrado	13°46' S	48°20' W	Moreira *et al.* (2009)
Monte Alegre de Goiás	Brazil	Goiás	Cerrado	13°15' S	46°54' W	Rodrigues (1996a)
Niquelândia	Brazil	Goiás	Cerrado	14°27' S	48°27' W	MZUSP
Pirenópolis	Brazil	Goiás	Cerrado	15°51' S	48°57' W	Rodrigues (1996a)
Santa Rita do Araguaia	Brazil	Goiás	Cerrado	17°19' S	53°12' W	Ávila-Pires (1995)
São Domingos	Brazil	Goiás	Cerrado	13°24' S	46°19' W	CHUNB
Fernando Falcão (Aldeia do Ponto)	Brazil	Maranhão	Cerrado	06°07' S	45°09' W	MZUSP
Balsas	Brazil	Maranhão	Cerrado	07°43' S	46°15' W	Barreto *et al.* (2007)
Barão de Tromaí	Brazil	Maranhão	Amazon	01°27' S	45°33' W	Ávila-Pires (1995)
Barra do Corda	Brazil	Maranhão	Cerrado	05°29' S	45°14' W	MZUSP
Barreirinhas	Brazil	Maranhão	Cerrado	02°45' S	42°49' W	MZUSP
Cândido Mendes	Brazil	Maranhão	Amazon	01°25' S	45°42' W	Ávila-Pires (1995)
Carolina	Brazil	Maranhão	Cerrado	07°20' S	47°27' W	CHUNB
Imperatriz	Brazil	Maranhão	Cerrado	05°31' S	47°28' W	Rodrigues (1996a)
Itaparica	Brazil	Maranhão	Amazon	03°01' S	44°55' W	Silva and Sites (1995)
Santo Amaro	Brazil	Maranhão	Cerrado	02°30' S	43°14' W	Rodrigues (1996a)
São João dos Patos	Brazil	Maranhão	Cerrado	06°38' S	43°34' W	CH-UFRRJ
Araçuaí	Brazil	Minas Gerais	Atlantic Forest	16°51' S	42°03' W	MCNR

Table 1. Continued.

Municipality	Country	Administrative Unit	Biome	Latitude	Longitude	Reference
Francisco Sá	Brazil	Minas Gerais	Cerrado	16°28' S	43°29' W	MCNR
Grão Mogol	Brazil	Minas Gerais	Cerrado	16°34' S	42°53' W	MCNR
Jaboticatubas	Brazil	Minas Gerais	Cerrado	19°30' S	43°44' W	UFMG
Nova Ponte	Brazil	Minas Gerais	Cerrado	19°08' S	47°40' W	MRNJ
Resplendor	Brazil	Minas Gerais	Atlantic Forest	19°14' S	41°18' W	MZUFV
Santana do Riacho	Brazil	Minas Gerais	Cerrado	19°10' S	43°43' W	UFMG
Virgem da Lapa	Brazil	Minas Gerais	Atlantic Forest	16°48' S	42°20' W	MCNR
Aquidauana (Morro do Camisão)	Brazil	Mato Grosso do Sul	Cerrado	20°28' S	55°47' W	Rodrigues (1996a)
Bonito	Brazil	Mato Grosso do Sul	Cerrado	21°07' S	56°29' W	CHUNB
Miranda (Passo do Lontra)	Brazil	Mato Grosso do Sul	Cerrado	20°14' S	56°22' W	Rodrigues (1996a)
Sonora	Brazil	Mato Grosso do Sul	Cerrado	17°36' S	54°49' W	Silva-Jr. *et al.* (2009)
Três Lagoas	Brazil	Mato Grosso do Sul	Atlantic Forest	20°47' S	51°42' W	MZUSP
Barra do Bugres	Brazil	Mato Grosso	Amazon	15°04' S	57°11' W	Rodrigues (1996a)
Barão de Melgaço	Brazil	Mato Grosso	Pantanal	16°12' S	55°57' W	MZUSP
Barra do Garças	Brazil	Mato Grosso	Cerrado	15°52' S	52°15' W	Rodrigues (1996a)
Cáceres	Brazil	Mato Grosso	Pantanal	16°04' S	57°40' W	Rodrigues (1996a)
Canarana	Brazil	Mato Grosso	Cerrado	13°33' S	52°16' W	MZUSP
Chapada dos Guimarães	Brazil	Mato Grosso	Cerrado	15°27' S	55°45' W	Colli *et al.* (2002)
Guiratinga	Brazil	Mato Grosso	Cerrado	16°20' S	53°45' W	MZUSP
Nobres	Brazil	Mato Grosso	Cerrado	14°43' S	56°19' W	CHUNB
Porto Estrela	Brazil	Mato Grosso	Cerrado	15°19' S	57°13' W	MZUSP
Porto Velho	Brazil	Mato Grosso	Cerrado	10°45' S	51°01' W	Ávila-Pires (1995)
Confresa (Barra do Tapirapés)	Brazil	Mato Grosso	Amazon	10°27' S	51°25' W	Rodrigues (1996a)
Conceição do Araguaia	Brazil	Pará	Amazon	08°15' S	49°16' W	Ávila-Pires (1995)
Novo Progresso	Brazil	Pará	Amazon	07°08' S	55°22' W	CHUNB
Cabedelo	Brazil	Paraíba	Atlantic Forest	07°01' S	34°50' W	Freire (1996)
Curimataú	Brazil	Paraíba	Caatinga	06°41' S	35°45' W	Arzabe *et al.* (2005)
Gurinhém	Brazil	Paraíba	Caatinga	07°07' S	35°25' W	Rodrigues (1996a)
João Pessoa	Brazil	Paraíba	Atlantic Forest	07°06' S	34°51' W	MZUSP
Mamanguape	Brazil	Paraíba	Atlantic Forest	06°50' S	35°07' W	CHUNB, MZUSP
Mataraca	Brazil	Paraíba	Atlantic Forest	06°29' S	34°56' W	Almeida *et al.* (2009)
Água Preta	Brazil	Pernambuco	Atlantic Forest	08°42' S	35°31' W	Rodrigues (1996a)
Barreiros	Brazil	Pernambuco	Atlantic Forest	08°48' S	35°11' W	MZUSP
Cabo	Brazil	Pernambuco	Caatinga	08°42' S	37°17' W	Rodrigues (1996a)
Exú	Brazil	Pernambuco	Caatinga	07°30' S	39°43' W	Rodrigues (1996a)
Pesqueira	Brazil	Pernambuco	Caatinga	08°21' S	36°41' W	Rodrigues (1996a)
Tamandaré	Brazil	Pernambuco	Atlantic Forest	08°45' S	35°06' W	CHUNB
Brasileira	Brazil	Piauí	Caatinga	04°05' S	41°30' W	Barreto *et al.* (2007)
Eliseu Martins	Brazil	Piauí	Cerrado	08°05' S	43°40' W	CHUNB
Guadalupe	Brazil	Piauí	Cerrado	06°47' S	43°33' W	CH-UFRRJ
João Costa	Brazil	Piauí	Caatinga	08°39' S	42°38' W	MZUSP
São Domingos do Azeitão	Brazil	Piauí	Cerrado	06°46' S	44°28' W	CH-UFRRJ
Uruçuí	Brazil	Piauí	Amazon	08°53' S	54°57' W	Barreto *et al.* (2007)
Nova Friburgo	Brazil	Rio de Janeiro	Atlantic Forest	22°17' S	42°32' W	MRNJ
Açu	Brazil	Rio Grande do Norte	Caatinga	05°34' S	36°56' W	Delfim and Freire (2007)
João Câmara (previously Baixa Verde)	Brazil	Rio Grande do Norte	Caatinga	05°32' S	35°48' W	Schmidt and Inger (1951)
Guajará-Mirim	Brazil	Rio Grande do Norte	Amazon	10°48' S	65°22' W	Gainsbury and Colli (2003)
Natal	Brazil	Rio Grande do Norte	Atlantic Forest	05°47' S	35°11' W	Freire (1996)
Tibau do Sul	Brazil	Rio Grande do Norte	Atlantic Forest	06°14' S	35°03' W	Sousa and Freire (2010)
Areia Branca	Brazil	Sergipe	Atlantic Forest	10°45' S	37°19' W	MZUSP

Table 1. Continued.

Municipality	Country	Administrative Unit	Biome	Latitude	Longitude	Reference
Maruim (Type locality)	Brazil	Sergipe	Atlantic Forest	10°43' S	37°05' W	Rodrigues (1996a)
Barra dos Coqueiros	Brazil	Sergipe	Atlantic Forest	10°54' S	37°01' W	MZUSP
Itabaiana	Brazil	Sergipe	Atlantic Forest	10°40' S	37°25' W	Carvalho *et al.* (2005)
Babaçulândia	Brazil	Tocantins	Cerrado	07°12' S	47°45' W	MZUSP
Bom Jesus do Tocantins	Brazil	Tocantins	Cerrado	08°57' S	48°09' W	CHUNB
Caseara	Brazil	Tocantins	Cerrado	09°16' S	49°57' W	CHUNB
Dianópolis	Brazil	Tocantins	Cerrado	11°37' S	46°49' W	CHUNB
Jalapão	Brazil	Tocantins	Cerrado	09°00' S	46°00' W	Vitt *et al.* (2002, 2005)
Goiatins	Brazil	Tocantins	Cerrado	07°42' S	47°19' W	CHUNB
Guaraí	Brazil	Tocantins	Cerrado	08°50' S	48°30' W	MZUSP
Ipueiras	Brazil	Tocantins	Cerrado	11°13' S	48°27' W	MZUSP
Lajeado	Brazil	Tocantins	Cerrado	09°45' S	48°21' W	MZUSP
Mateiros	Brazil	Tocantins	Cerrado	10°32' S	46°25' W	Mesquita *et al.* (2006)
Palmas	Brazil	Tocantins	Cerrado	10°14' S	48°21' W	CHUNB, MZUSP
Paranã	Brazil	Tocantins	Cerrado	12°37' S	47°52' W	CHUNB, MZUSP
Pium	Brazil	Tocantins	Cerrado	10°26' S	49°11' W	CHUNB
Peixe	Brazil	Tocantins	Cerrado	12°01' S	48°32' W	CHUNB, MZUSP
Pedro Afonso	Brazil	Tocantins	Cerrado	08°58' S	48°10' W	CHUNB
Porto Nacional	Brazil	Tocantins	Cerrado	10°42' S	48°24' W	CHUNB
São Salvador do Tocantins	Brazil	Tocantins	Cerrado	12°44' S	48°14' W	MZUSP
Tobatí	Paraguay	Cordillera	Humid Chaco	25°15' S	57°04' W	MNHNP
Ybycuí	Paraguay	Paraguari	Humid Chaco	26°01' S	57°03' W	MNHNP
Assunción	Paraguay	Presidente Hayes	Humid Chaco	25°13' S	57°40' W	Rodrigues (1996a)
San Pedro del Ycuamandyyu	Paraguay	San Pedro	Humid Chaco	24°03' S	57°04' W	MNHNP
Cerro Colorado	Bolivia	Santa Cruz	Dry Chaco	19°27' S	62°21' W	Dirksen and De la Riva (1999)

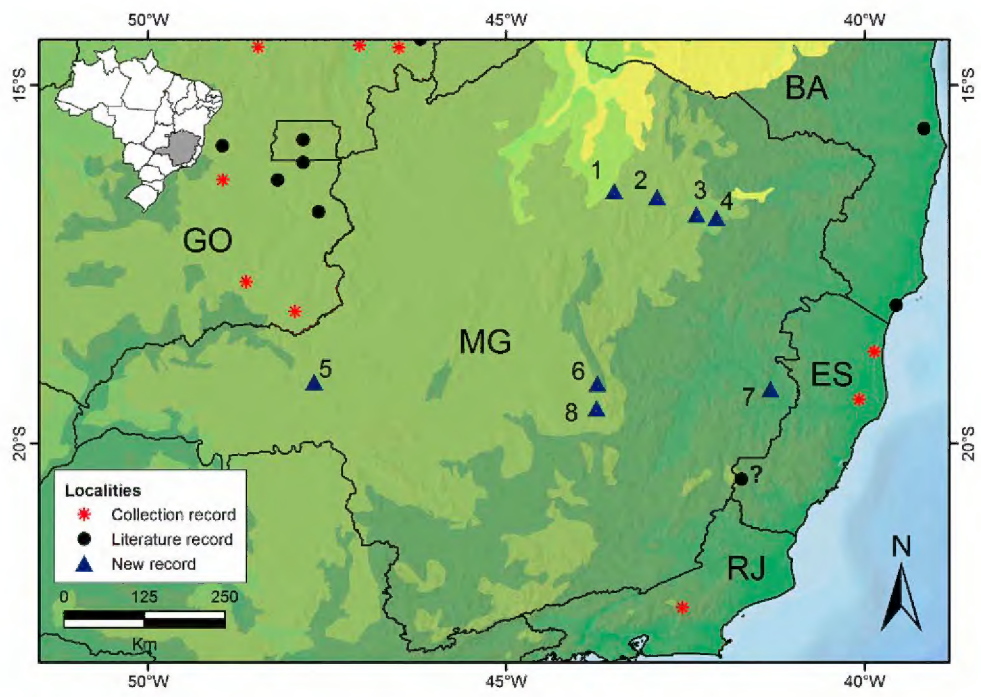

Figure 4. Geographic distribution of *Micrablepharus maximiliani* in state of Minas Gerais. BA, state of Bahia; ES, state of Espírito Santo; GO, state of Goiás; MG, state of Minas Gerais. Municipalities: 1, Francisco Sá; 2, Grão Mogol (Fazenda Curral Velho); 3, Virgem da Lapa; 4, Araçuaí; 5, Nova Ponte; 6, Santana do Riacho (Serra do Cipó); 7, Resplendor; 8, Jaboticatubas (Serra do Cipó). The symbol "?" corresponds to a record stated as uncertain by Rodrigues (1996a). Map by M. R. Moura.

The subtropical portion of South America seems to be determinant to the geographic distribution of several genera of lizards, snakes and amphisbaenians, which are well distributed across the continent, including *Micrablepharus*. The rare presence or even the absence of many species of reptiles below the Tropic of Capricorn has been considered as a latitudinal gradient of richness, with a gradual decrease in diversity from Ecuador to higher latitudes (Bérnils *et al.* 2007). Besides this, there are four records of five specimens of *M. maximiliani* in the subtropical portion of Paraguay, that could corroborate with the statement of Bérnils *et al.* (2007) about the decrease of diversity or even abundance of reptiles in the subtropical region.

The poor available knowledge of reptile richness in the states of Minas Gerais (Bérnils *et al.* 2009), Espírito Santo (Almeida *et al.* 2007) and Rio de Janeiro (Rocha *et al.* 2000), turns difficult the establishment of a correct geographic distribution area of *M. maximiliani* in these states. Therefore, more inventories are needed in order to reach a better understanding of patterns of distribution from reptiles, including here *M. maximiliani*. Besides *M. maximiliani* has not been included in any threat category by the IUCN (IUCN 2009) and Brazilian redlists (Machado *et al.* 2008), it is categorized as Data Deficient in the Paraguayan redlist (Motte *et al.* 2009), due to the poor knowledge of its geographical distribution.

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Appendix 1. Specimens of *Micrablepharus maximiliani* examined in this study (n = 18).

Brazil: ***State of Minas Gerais***: municipality of Araçuaí (MCNR 2593), Francisco Sá (MCNR 2147), municipality of Grão Mogol (Fazenda Curral Velho) (MCNR 2153-2154), Jaboticatubas (Serra do Cipó) (UFMG 1062-1063, UFMG 1664-1668), municipality of Nova Ponte (MNRJ 18264), municipality of Resplendor (MZUFV 857-858), municipality of Santana do Riacho (Serra do Cipó) (UFMG 1862-1864), municipality of Virgem da Lapa (MCNR 2789).

Appendix 2. Specimens of *Micrablepharus maximiliani* housed at the herpetological collections consulted for this study.

Brazil: ***State of Alagoas***: municipality of Passo de Camaragibe (MZUSP 99000-99001). ***State of Bahia***: municipality of São Desidério (MZUSP 89296). ***State of Ceará***: municipality of Arajara (MZUSP 52155- 52156), municipality of Milagres (CHUNB 56525- 56528, MNRJ 18497). ***State of Espírito Santo***: municipality of Linhares (ZUEC 88562195), municipality of São Mateus (MZUSP 88146). ***State of Goiás***: municipality of Anápolis (MZUSP 13896), municipality of Alto Paraíso de Goiás (CHUNB 12438, CHUNB 13584), municipality of Alvorada do Norte (CHUNB 33066-33068, CHUNB 33071-33072, CHUNB 37164-37175), municipality of Caldas Novas (MZUSP 90021- 90024), municipality of Catalão (MNRJ 18262), municipality of Colinas do Sul (CHUNB 36072-36077, MNRJ 19225-19230), municipality of Flores de Goiás (CHUNB 38458-38465), municipality of municipality of Niquelândia (MZUSP 89994), São Domingos (CHUNB 37483-37489, CHUNB 43893-43895). ***State of Maranhão***: municipality of Fernando Falcão (MZUSP 6302), municipality of Barra do Corda (MZUSP 6303), municipality of Barreirinhas (MZUSP 95289- 95290), municipality of Carolina (CHUNB 52076-52115), municipality of São João dos Patos (CH-UFRRJ 2385-2401). ***State of Mato Grosso do Sul***: municipality of Bonito (CHUNB 44110), municipality of Três Lagoas (MZUSP 13447-13448, MZUSP13966). ***State of Mato Grosso***: municipality of Canarana (MZUSP XXX), municipality of Guiratinga (MZUSP 98551-98557), municipality of Nobres (CHUNB 40776), municipality of Porto Estrela (MZUSP 94185-94204). ***State of Pará***: municipality of Novo Progresso (CHUNB 8194-8195, CHUNB 34982-34983). ***State of Paraíba***: municipality of João Pessoa (MZUSP 65991, MZUSP 66233), municipality of Mamanguape (CHUNB 28987-28989, CHUNB 56674-56689, MZUSP 6546-6547). ***State of Pernambuco***: municipality of Barreiros (MZUSP 89292), municipality of Tamandaré (CHUNB 28986). ***State of Piauí***: municipality of Eliseu Martins (CHUNB 56139), municipality of Guadalupe (CH-UFRRJ 0543-0557), municipality of João Costa (MZUSP 89461-89462), municipality of São Domingos do Azeitão (CH-UFRRJ 1252-1253, CH-UFRRJ 1300-1301, CH-UFRRJ 1305, CH-UFRRJ 1307, CH-UFRRJ 1309-1310). ***State of Rio de Janeiro***: municipality of Nova Friburgo (MRNJ 18266-18267). ***State of Sergipe***: municipality of Areia Branca (MZUSP 88095-88096), municipality of Barra dos Coqueiros (MZUSP 80958-80959). ***State of Tocantins***: municipality of Babaçulândia (MZUSP 90974-90980), municipality of Bom Jesus do Tocantins (CHUNB 37285), municipality of Caseara (CHUNB 45266, CHUNB 58101), municipality of Dianópolis (CHUNB 33070), municipality of Goiatins (CHUNB 56137-56138), municipality of Guaraí (MZUSP 91023-91026), municipality of Ipueiras (MZUSP 91179-91182), municipality of Lajeado (MZUSP 89274), municipality of Palmas (CHUNB 11380-11383, CHUNB 14558-14563, MZUSP 87174, MZUSP 87731), municipality of Paranã (CHUNB 37176-37218, MZUSP 88736-88799), municipality of Pium (CHUNB 58084, CHUNB 58088), municipality of Peixe (CHUNB 52613-52618, MZUSP 88721-88727), municipality of Pedro Afonso (CHUNB 52420), municipality of Porto Nacional (CHUNB 47755-47756), municipality of São Salvador do Tocantins (MZUSP 89206-89222, MZUSP 98598). **Paraguay:** ***Departament of Cordillera***: municipality of Tobati (specimen donated from MNHNP to Museum of Zoology of the University of Michigan, at Ann Arbor, U.S.A., under the number UMMZ 146754). ***Departament of Paraguari***: municipality of Ybycuí (MNHNP 8445). ***Departament of San Pedro***: municipality of San Pedro del Ycuamandyyu (MNHNP 11466).